

# Jet Shapes with MidPoint

(Answers to GP questions II)

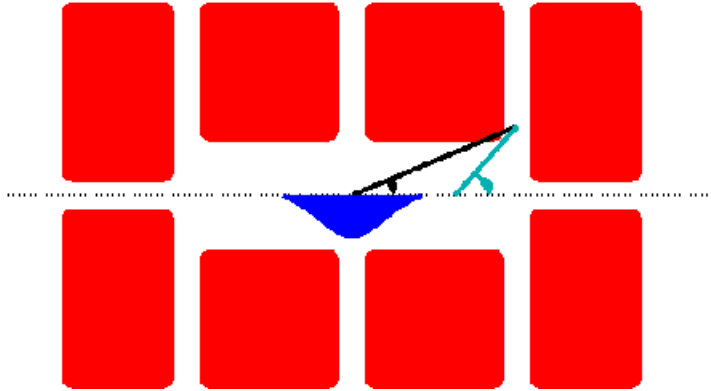
Mario Martinez

(IFAE-Barcelona)

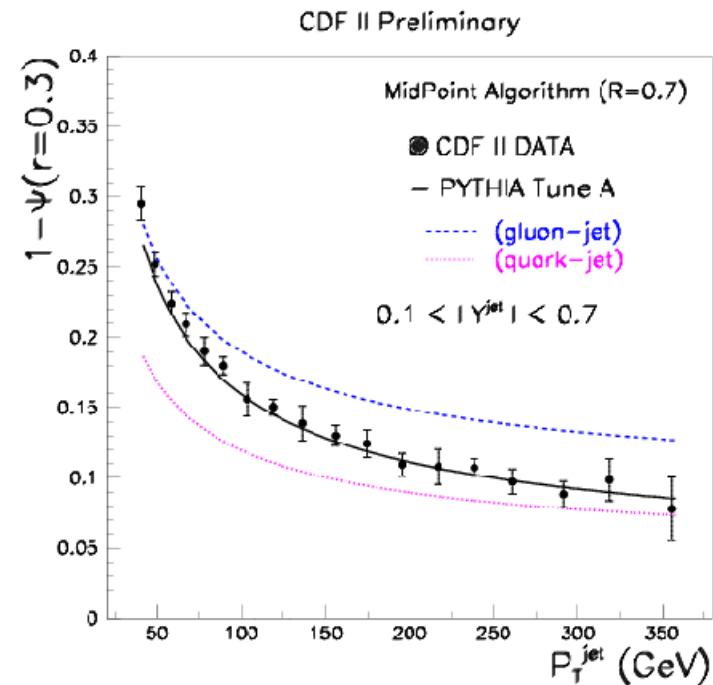
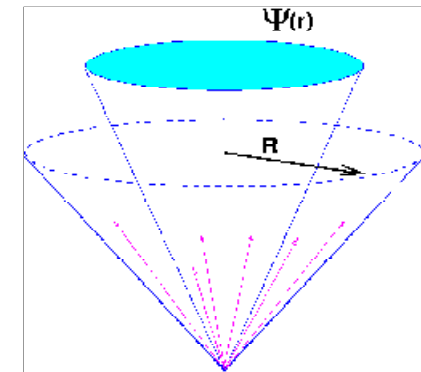


CDF QCD Meeting, September 3<sup>rd</sup> 2004

# Discussion



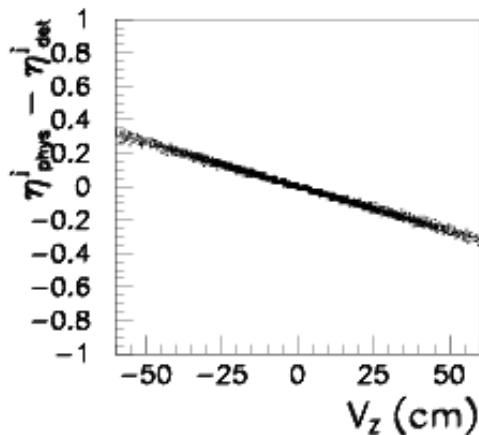
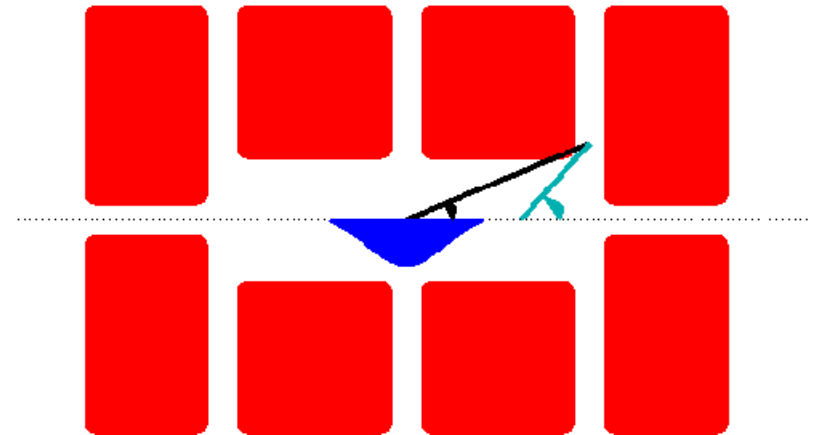
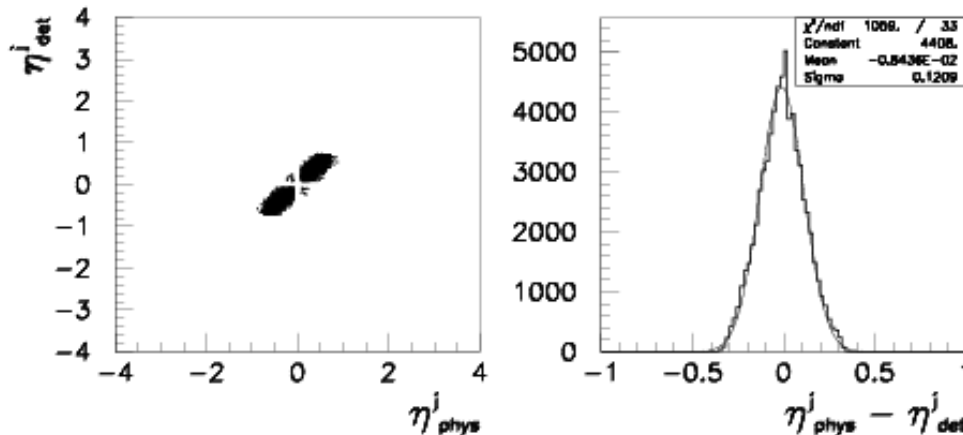
- List from GP second meeting:
  - ✓ Estimate effect from events with jets going to cracks
  - ✓ PDF dependence at very very high-Pt (sensitivity to gluon ?)



$$\Psi(r) = \frac{1}{N_{jets}} \sum_{jets} \frac{P_T(0,r)}{P_T^{jet}(0,R)}$$

# $\eta$ (physics) versus $\eta$ (detector)

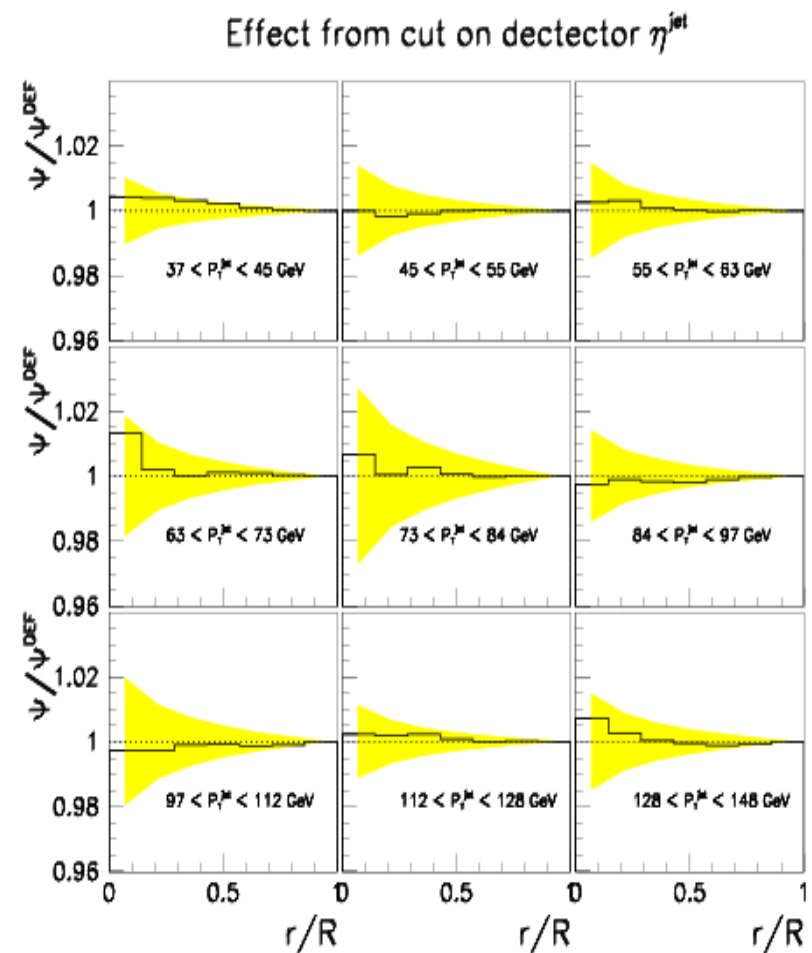
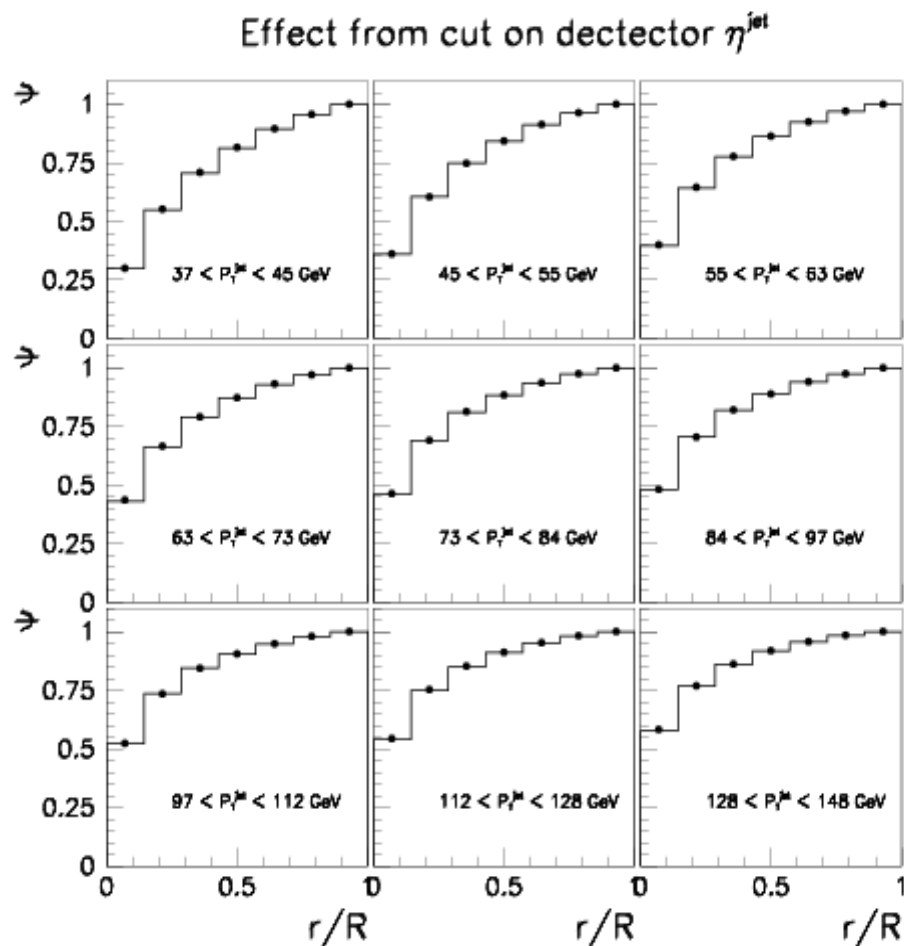
$\eta^{\text{jet}}_{\text{physics}}$  versus  $\eta^{\text{jet}}_{\text{detector}}$



- $0.1 < |Y| < 0.7$  (vertex corrected)  
(some jets have the core in a detector crack)
- We apply additional cut on  $\eta$  ( $V_z=0$ )
  - Compute  $\eta$  (not  $Y$ ) to remove mass effects
  - Correct back  $\eta(V_z) \rightarrow \eta(V_z=0)$
  - Apply additional cut on  $0.1 < |\eta(V_z=0)| < 0.7$
  - Unfold the data to hadron level  
(ideally that removes the effect of the cut if MC describes the data and one has infinite statistics..)

# Effect from cut on detector $\eta$

- with cut      -- default

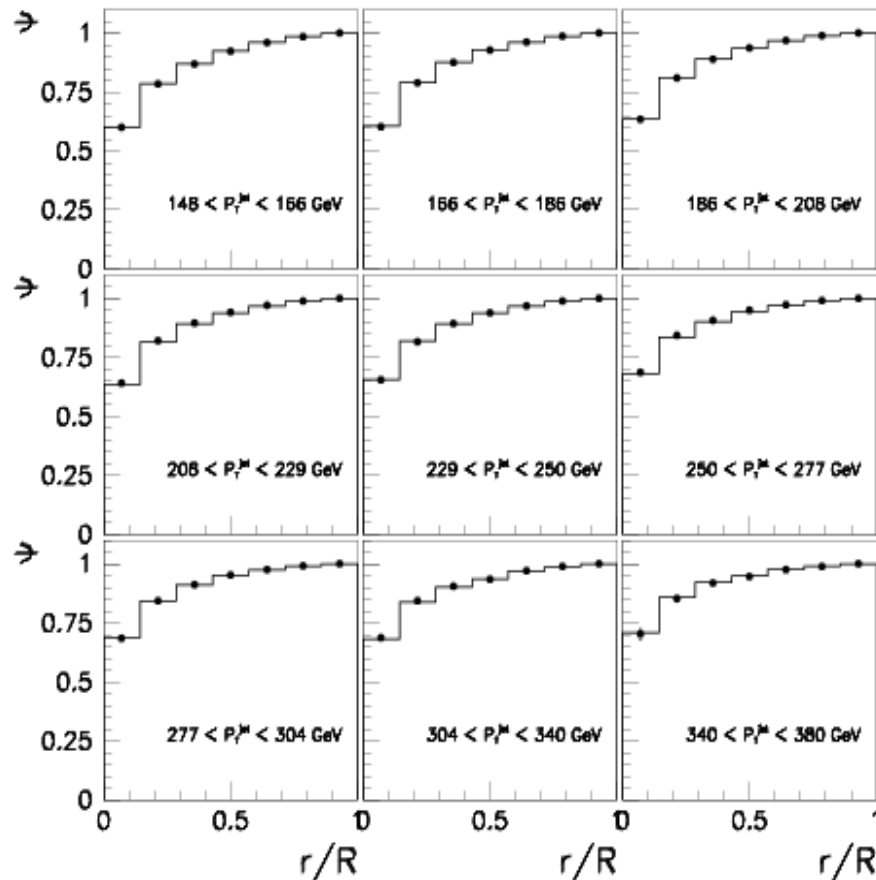


default uncertainty

Effect is within stats. fluctuations..

# Effect from cut on detector $\eta$

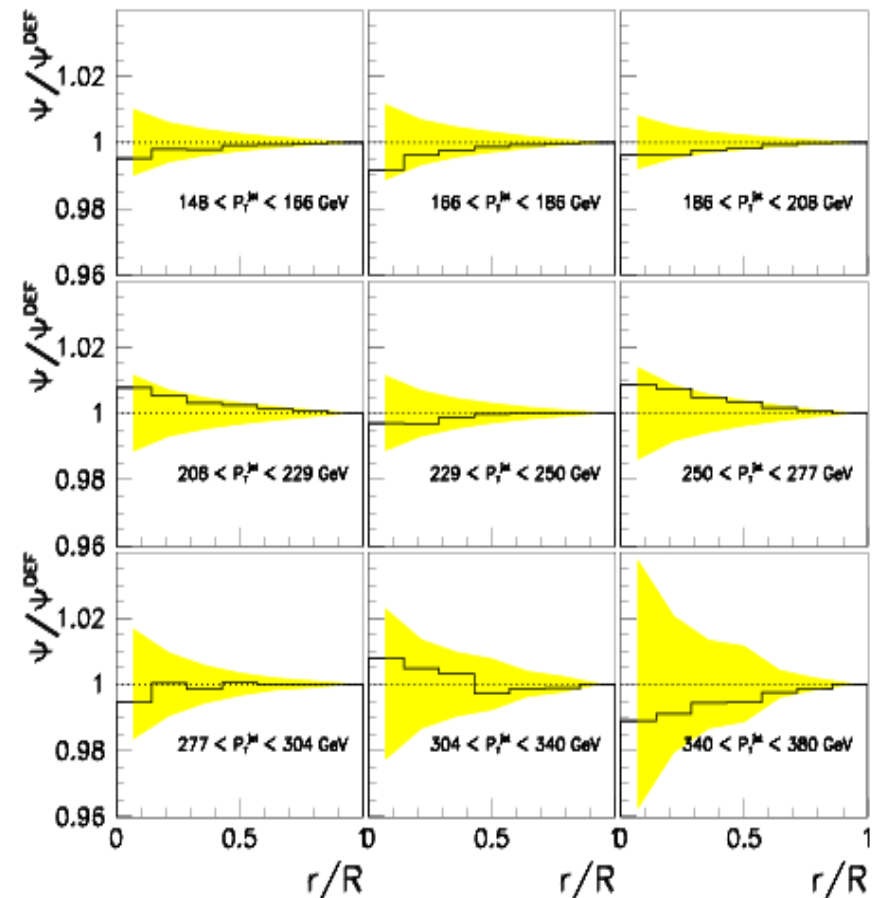
Effect from cut on detector  $\eta^{\text{jet}}$



- with cut      -- default

Effect is within stats. fluctuations..

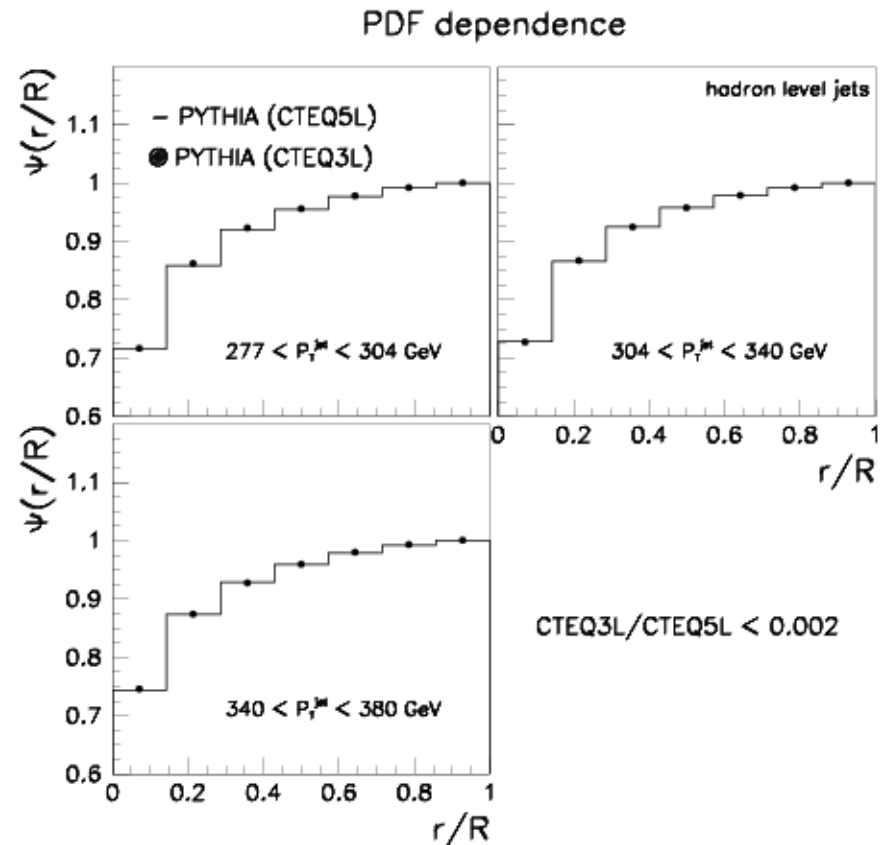
Effect from cut on detector  $\eta^{\text{jet}}$



default uncertainty

# Gluon PDF sensitivity ?

- We have compared the jet shapes at hadron level from CTEQ5L and CTEQ3L (very different gluon at high- $x$ )
- we observe no sensitivity to gluon PDFs in the jet shapes



# PRD Draft Status

- Version 3 of PRD already in GP's hands
- I hope we can go to the Collaboration with this version (but is GP's call to decide..)

☺...please!

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